

## **CHAPTER 2. MITIGATION ACTIVITY PROGRESS**

### **2.1 Hydrology Health**

#### **2.1.1 Maintain Adequate Hydrologic Conditions in the MA**

In the 2003 “ALP Project Wetland/Riparian Mitigation and Monitoring Plan for the La Plata River Corridor” Reclamation committed to monitoring La Plata River flows and to ensure that the return flows from irrigation at the MA will continue to contribute to the spring areas in tract III (furthest upstream).

##### **2.1.1.1 Progress in Utilizing Reclamation’s Water Rights**

In 2003, Reclamation contracted for a private entity to operate and maintain Reclamation’s irrigation on the acquired mitigation property. The year was dry and little water was available, but irrigation did occur and will occur again in 2004. This activity will be repeated annually until such time as it is deemed unnecessary or the water is used in other ways within the MA. Monitoring has not indicated that a change in use or application of other Reclamation water rights is needed at this time.

##### **2.1.1.2 Progress in Monitoring La Plata River Flows**

See Figures 4-6 below for the results of Reclamation’s flow monitoring for 2001-2003. Note that this data is provisional and subject to refinement. The flows described on these graphs use a 30-day average value of flows rather than a daily flow value to more clearly illustrate a typical flow value for the timeframe indicated and for enhanced readability of the graphs.

**Figure 4. 2001 La Plata River monitoring results.**

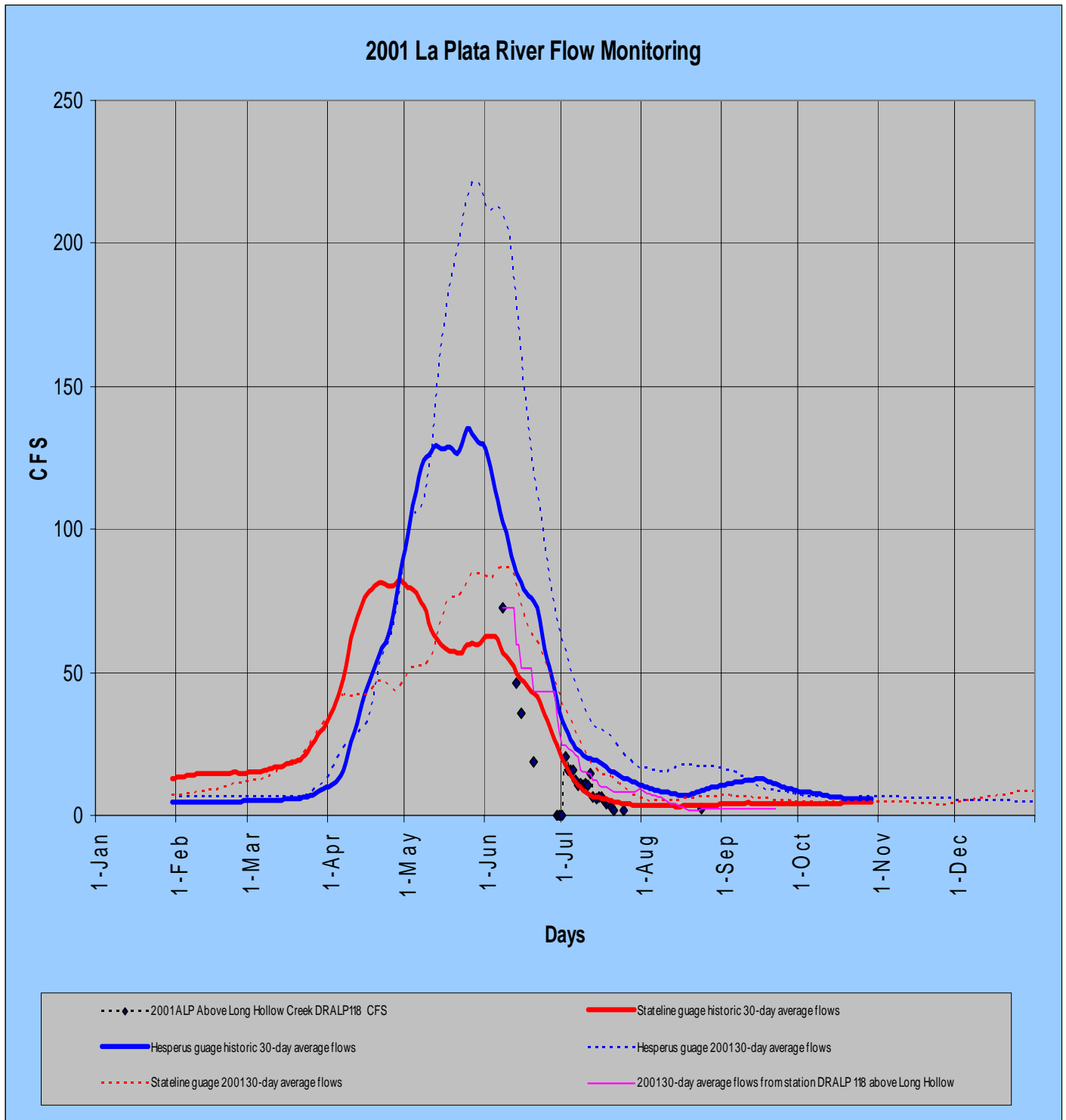


Figure 5. 2002 La Plata River monitoring results.

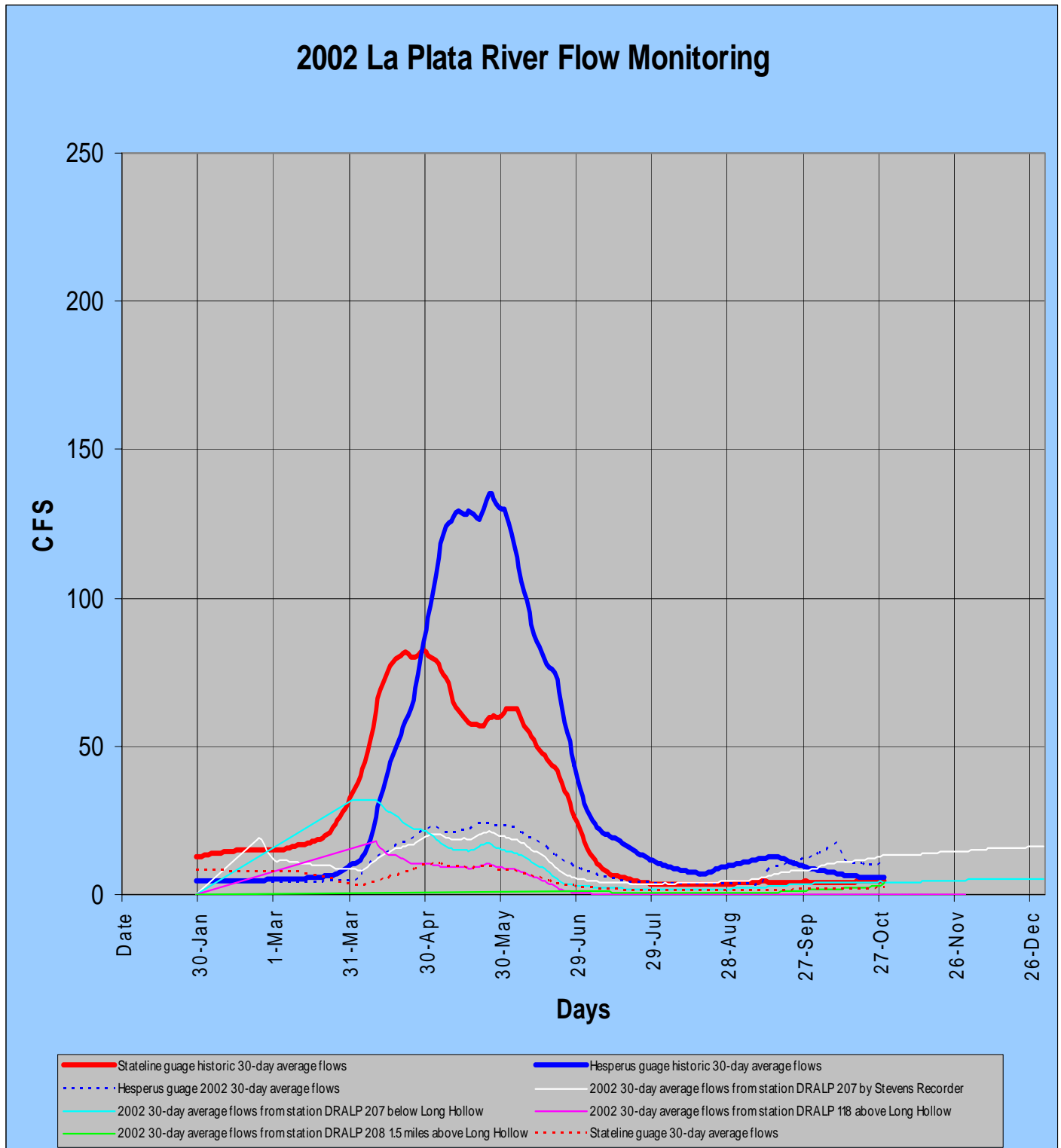
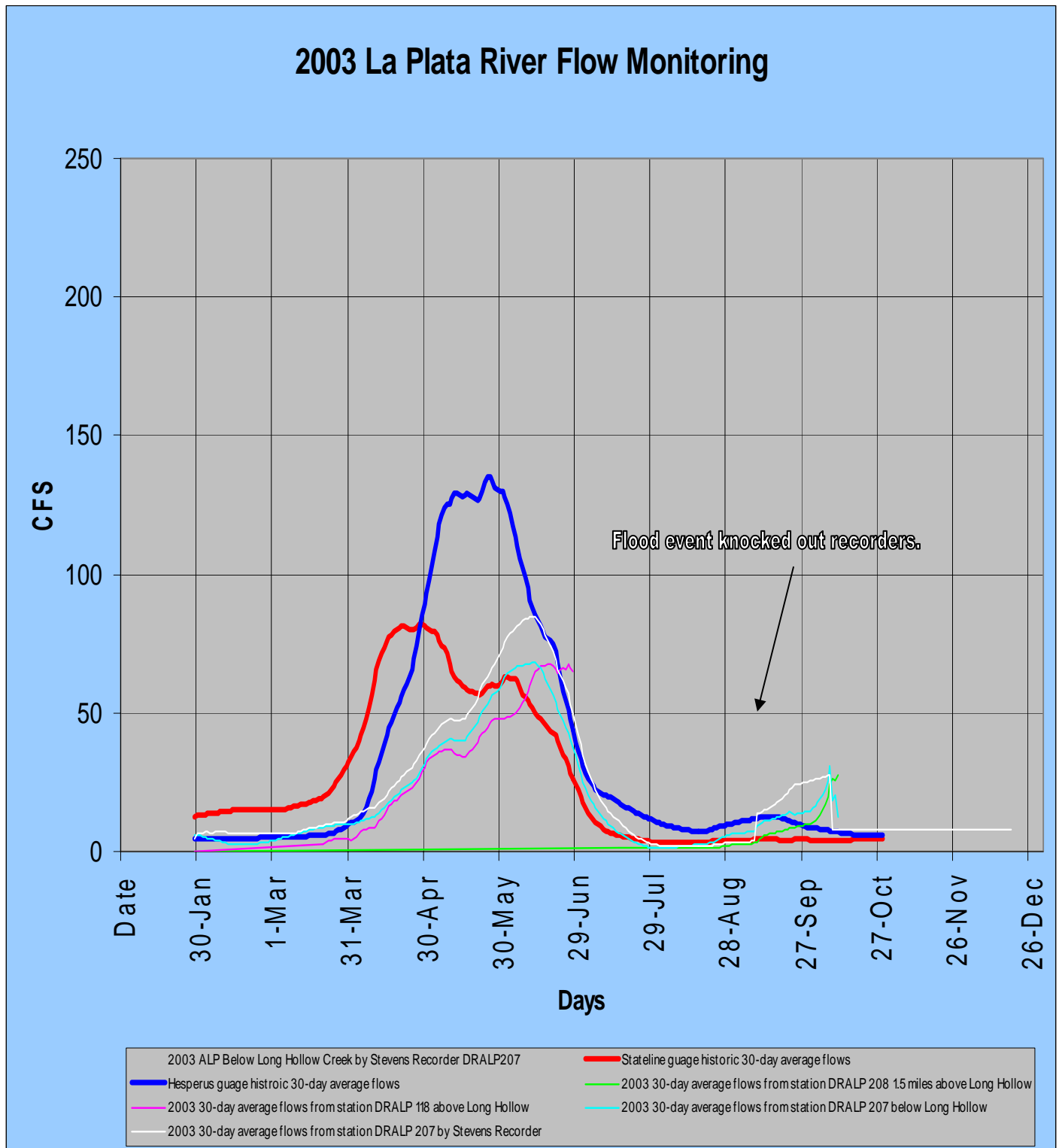


Figure 6. 2003 La Plata River monitoring results.



## **2.1.2 Streambank Stabilization**

Based on the 2001 studies completed by Reclamation Contractors (Frontier 2001), a total of approximately 1,500 linear feet of streambank may need to be treated in seven different locations.

### **2.1.2.1 Progress in Streambank Stabilization**

Following two relatively low water years without significant grazing pressure, river bounding vegetation has increased (particularly coyote willow which increased overall density by approximately 7%) without significant erosion with the singular exception of the late summer flood event in 2003 which also damaged Reclamation's water flow monitoring devices on the La Plata River as noted in Figure 6. Some scouring post-monitoring did occur, but still, all identified sensitive bank lines aside of one located within the channel restoration portion of the mitigation program all show significant improvement in vegetation and reduced erosion rates despite the flood. Monitoring of these sensitive bank lines will continue in 2004 and beyond until natural erosion patterns are observed. Quantified stream bank vegetation densities for potentially unstable areas will be provided in the 2004 annual report and Reclamation will make a formal decision regarding the future need for constructed stream bank stabilization pending those results.

## **2.1.3 Stream Channel/Floodplain Restoration**

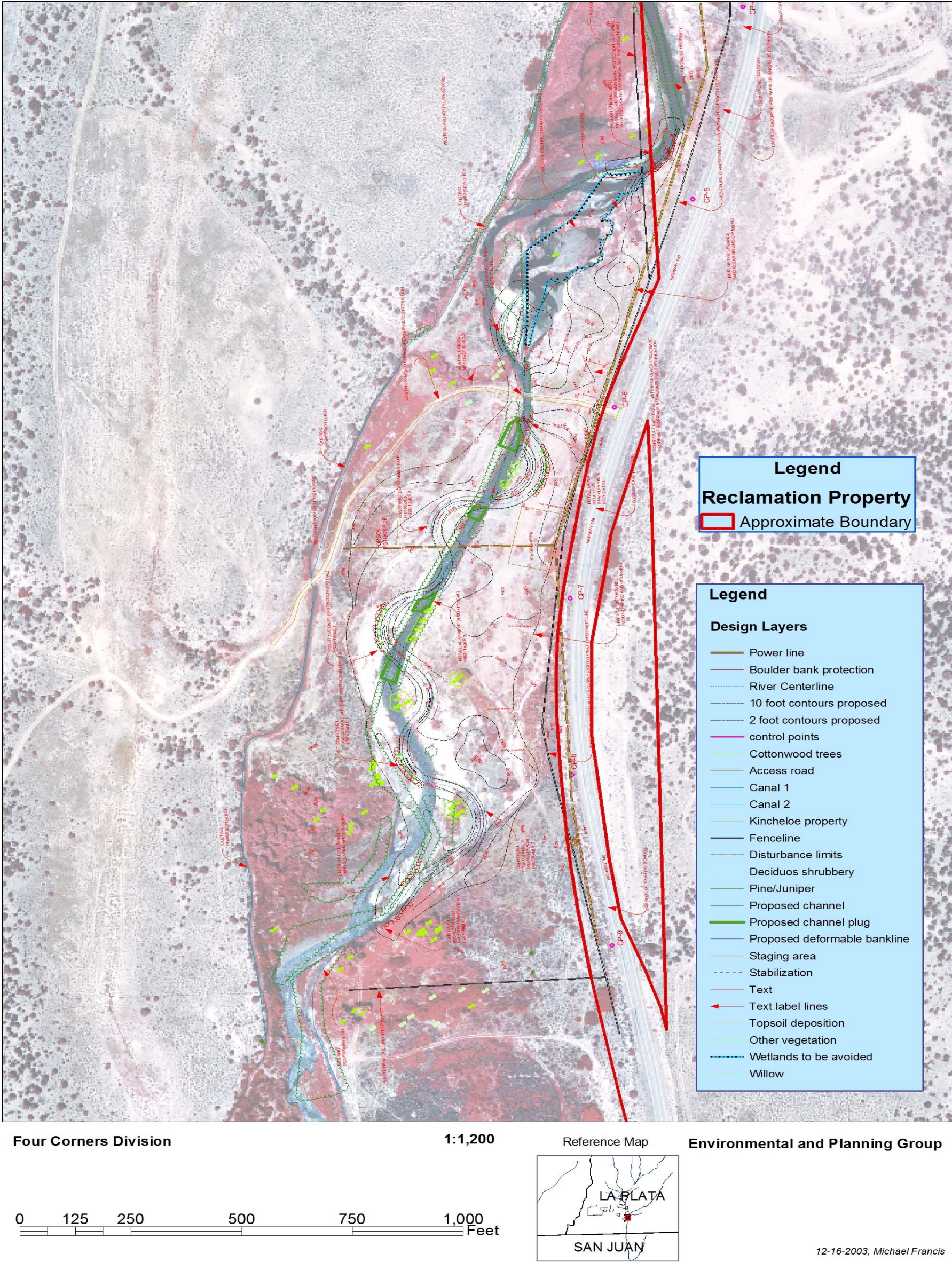
Part of Reclamation's wetland/riparian mitigation commitment in the FSEIS and the 2003 "ALP Project Wetland/Riparian Mitigation and Monitoring Plan for the La Plata River Corridor" is to create and restore habitats along the La Plata River (along with protection and enhancement of these same habitats). Reclamation's restoration of the 2700 linear foot channel and floodplain restoration of the La Plata River will entail eliminating the levees, re-establishing a sinuous river channel, and re-establishing river/floodplain interactions to restore the river's zone-of-influence. The result of such measures will serve both to restore and create new functional riparian habitats. Figure 7 below provides a visual description the current channel and floodplain restoration design.

### **2.1.3.1 Progress in Stream Channel/Floodplain Restoration**

Reclamation contracted with Tetra Tech, Inc. of Irvine, CA (through their Breckenridge, CO office) for the development of a river restoration design which was completed in August of 2003. Currently Reclamation is reviewing the technical aspects of the design and developing the contracts for implementation which is currently projected to occur in the fall of 2004. The restoration plan has also been reviewed by the Service, EPA and CDOW.



Figure 7. Channel Restoration Design Map





## 2.2 Integrated Vegetation Management

### 2.2.1 Livestock Management (Fencing)

Livestock grazing will be removed from the MA by the installation and maintenance of a functional external boundary fence.

#### 2.2.1.1 Progress in livestock management (Fencing)

Reclamation has successfully removed all leases for grazing from the MA and is in the midst of contract development for fencing to control minor trespass grazing issues that still occur. The riparian areas will be fenced entirely in 2004. The entire MA is in need of approximately 8.5 miles of new or repaired fencing (total) which will be accomplished prior to Project completion. Reclamation has coordinated final fence design specifications with CDOW, the Southern Ute Indian Tribe and the Service.

Reclamation has completed their NEPA documentation for this action and has arranged for cultural and biological monitoring to protect trust assets during construction. Reclamation has also developed a contracting strategy and is in the midst of developing the contract to accomplish this work in 2004 and 2005.

**Figure 8. MA Tract III fence line in 2003.** *(MA is to the right and protected from grazing.)*



### 2.2.2 Weed Management and Native Vegetation Re-establishment

As a measure to enhance and restore the functions and values of the La Plata River corridor, Reclamation committed to controlling Colorado listed noxious weeds in the MA. The table below describes the original weed coverage as assessed in 2001 (see the 2003 “ALP Project Wetland/Riparian Mitigation and Monitoring Plan for the La Plata River Corridor” appendices for further detail). Reclamation also committed to replace weed tree species with native species on an approximate one-for-one basis and to re-establish desirable herbaceous vegetation to the maximum extent practicable to establish a naturally self-sustaining natural system along the La Plata River.

**Table 3. Acreage of initial weed management areas in the riparian portion of the MA.**

MA Tract	Parcel	Acres
Tract II	Main Parcel	55.8
	Northern Parcel	24.5
Tract III	Single Parcel	64.1
Total		144.2 acres

#### 2.2.2.1 Progress in Weed Management

Reclamation initiated weed control actions in the fall of 2002 with a 75 acre test treatment of tamarisk and Russian olive within the southern portion of Tract II. In 2003 Reclamation began its herbaceous weed control efforts and sprayed approximately 250 acres of riparian and buffer zone habitats as a first stage in treatment for Tracts II and III. Biological (insect) controls were employed for three weed species as prescribed by state weed control insectary release guidelines. Within the 250 acres described above, approximately 150 acres of land was treated for tamarisk and Russian olive in the ongoing weed management effort. An additional 30 acres is still in need of treatment in early spring of 2004. Although treatments occurred in 2002-2003 most results will not become apparent in the monitoring transects until 2004 due to inclusion of treated plant communities in 2003 transect measurements.



**Figure 9. Photo of musk thistle, redroot pigweed and bindweed treated in summer 2003.**  
*(This photo is soon after treatment...note leaves curling.)*



**Figure 10. Photo of spotted knapweed, kochia and yellow toadflax prior to treatment in 2003.**





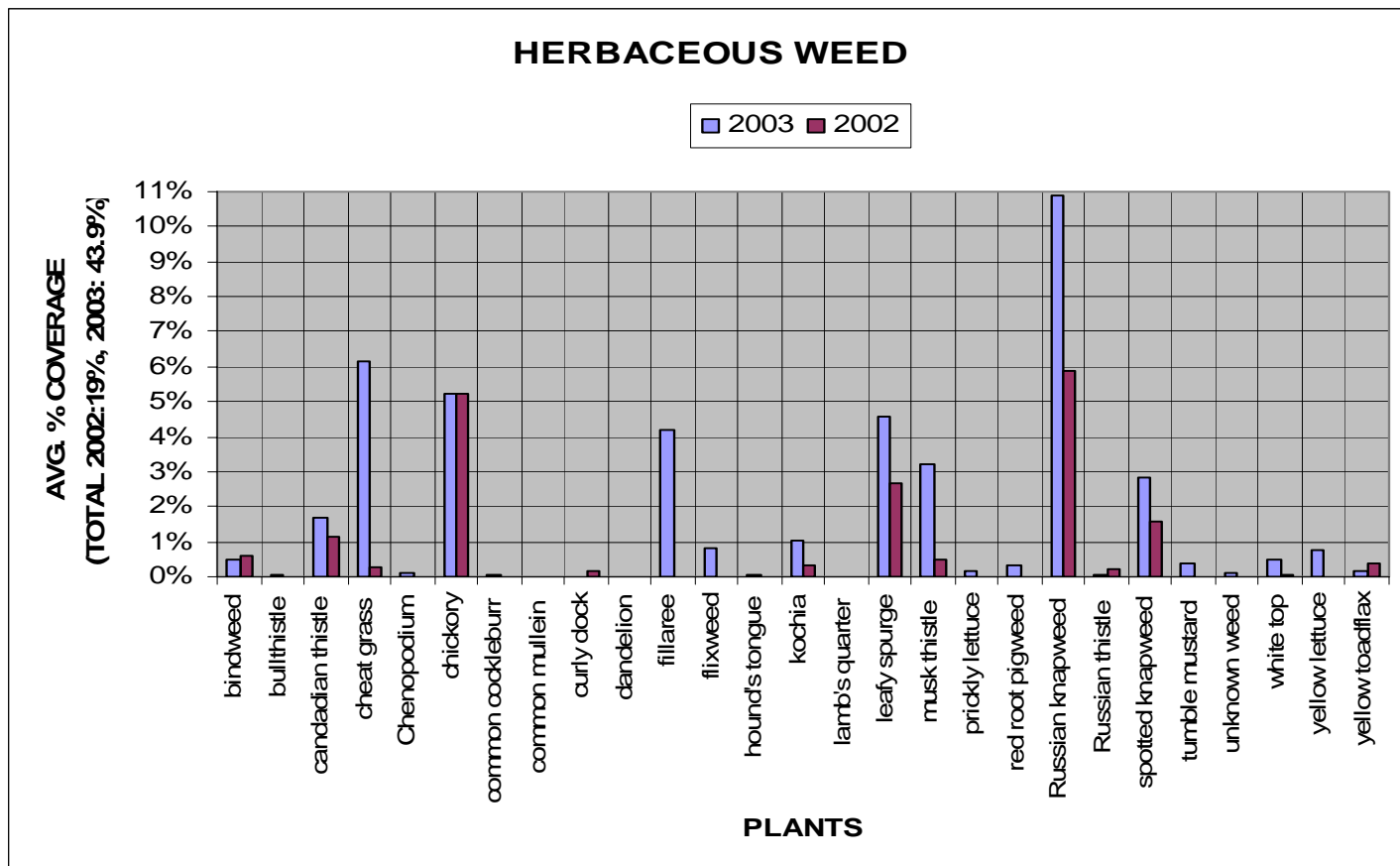
**Figure 11. Photo of leafy spurge, spotted knapweed, musk thistle, etc. after treatment.**



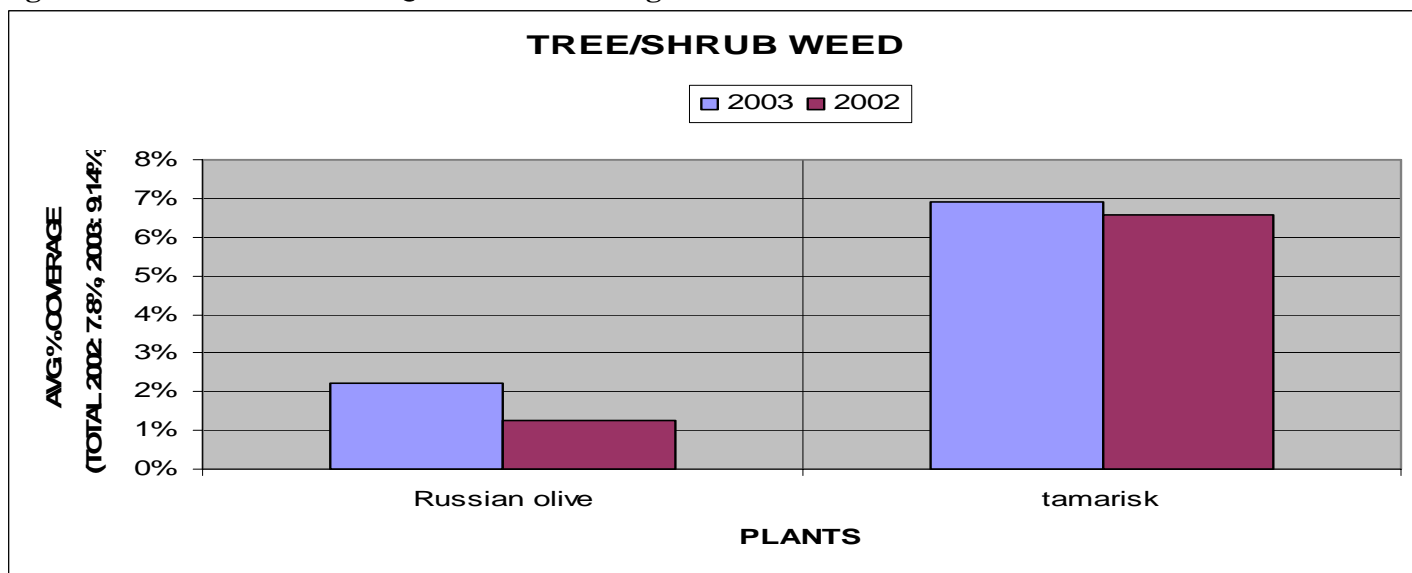
**Figure 12. Photo Russian knapweed and tamarisk treatment at highway 140 fence line.**



**Figure 13. Herbaceous Weed Quantified Coverage** (Note that the percentage values on the left side of these figures represents the percent of total ground coverage by the specific plant type represented by the bars.)



**Figure 14. Tree/shrub Weed Quantified Coverage**





### 2.2.2.2 Progress in Native Vegetation Re-establishment

Reclamation has contracted for the growing of 8,000+ native trees and shrubs to replace those woody weeds removed from the MA. The following table (Table 4) provides a description of plants currently being grown for re-planting in the disturbed riparian areas within the MA. Plant species lists were developed in conjunction with CDOW, the Service and Colorado Natural Resources Department recommendations. These plants were scheduled to be planted in 2003, but will be instead planted in the fall of 2004 immediately following the channel restoration construction phase. Reclamation has contracted for the planting design development, physical planting and the maintenance of planted trees and shrubs relative to the MA.

**Table 4. Woody species to be planted in the MA.**

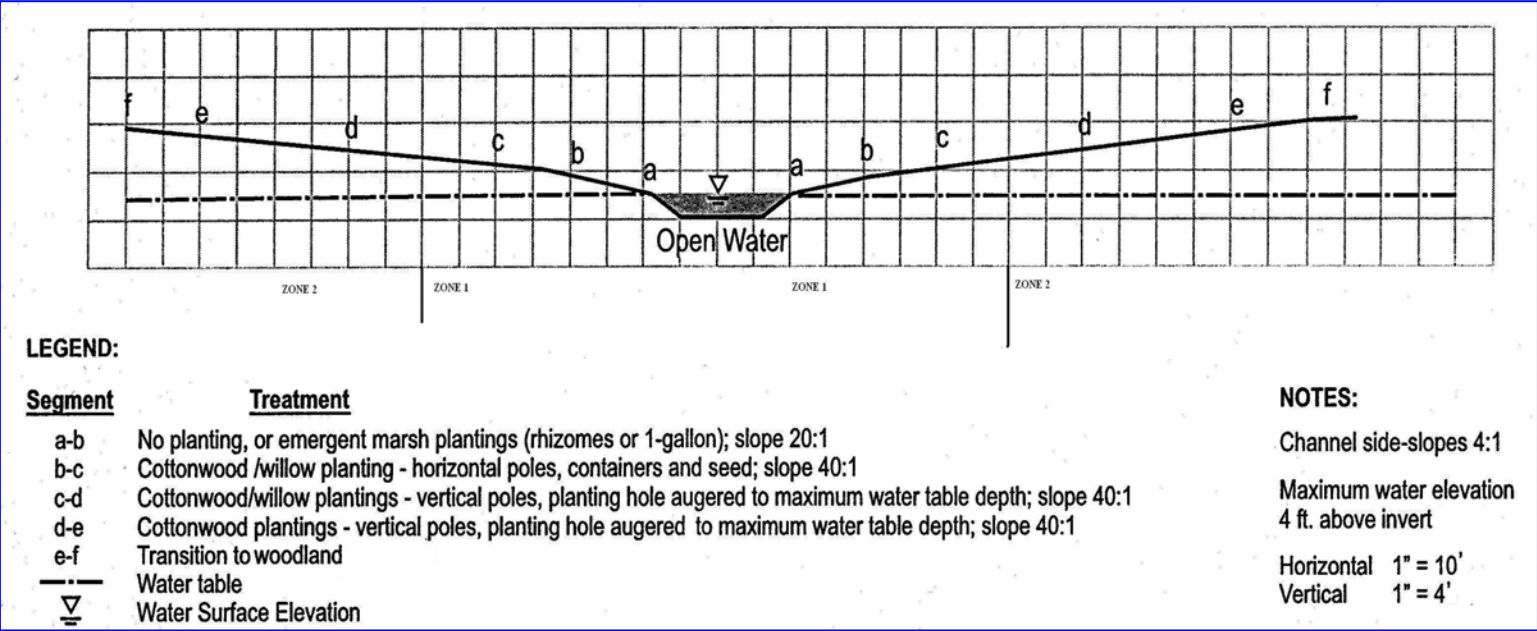
Propagules generated for the ALP wetland/riparian mitigation program:						
Number as of 10/4/03*	Species Code	Common Name(s) and Picture	Genus	Species	Subspecies/ Variety	Form
250	3LSU	Three-leaf sumac, skunkbush sumac	Rhus	trilobata		Shrub
180	NMPR	New Mexican privet, wild olive, elbow bush, stretchberry	Forestiera	neomexicana	pubescens	Shrub
283	BUBE	Silver buffaloberry	Shepherdia	argentea		Shrub
180	CHCH	Choke cherry, black chokecherry	Prunus	virginiana	melanocarpa	Shrub/tree
1100	COWI	Coyote willow, sandbar willow, desert willow, narrowleaf willow, sandbar willow basket Willow, gray Willow, Narrow-leaf Willow, Slender Willow, Acequia Willow	Salix	exigua		Shrub
1063	PLWI	Peach-leaf willow	Salix	amygdaloides		Shrub/tree
2550	RGCO	Rio Grande cottonwood, Valley cottonwood, Wislizenus cottonwood	Populus	deltoides	wislizenii	Tree
2563	HYCO**	Narrow-leaf cottonwood	Populus	angustifolia	**Includes crosses...These hybridize easily. Lumped together due to this consideration.	Tree
		Lance-leaf cottonwood	Populus	acuminata		Tree
8169 plants	TOTAL	9 species	*Provided by UMUT F&RE subcontractor Cannon Forest Products			

Reclamation has committed to a certain level of native plant community establishment and enhancement within the MA relative to weed treatment and stream restoration vegetation or substrate disturbances. Below in Figures 15, 16

and 17 (modified from CH2MHILL), are typical planting descriptions for this type of project. These figures relate to the information presented in Figure 7 describing channel restoration. Table 4 above lists the woody species being grown for planting in 2004.

Reclamation has not conducted any planting in the riparian portions of the MA as of the date of this writing, but has projected approximately 50 total riparian and buffer acres for planting in 2004. Reclamation has planted 80 upland acres in 2002 and has other upland acreage projected for planting in 2004.

**Figure 15: Cross-sectional Planting Zones.**



**Figure 16. Cross-sectional Planting Relative to the Water Table.**

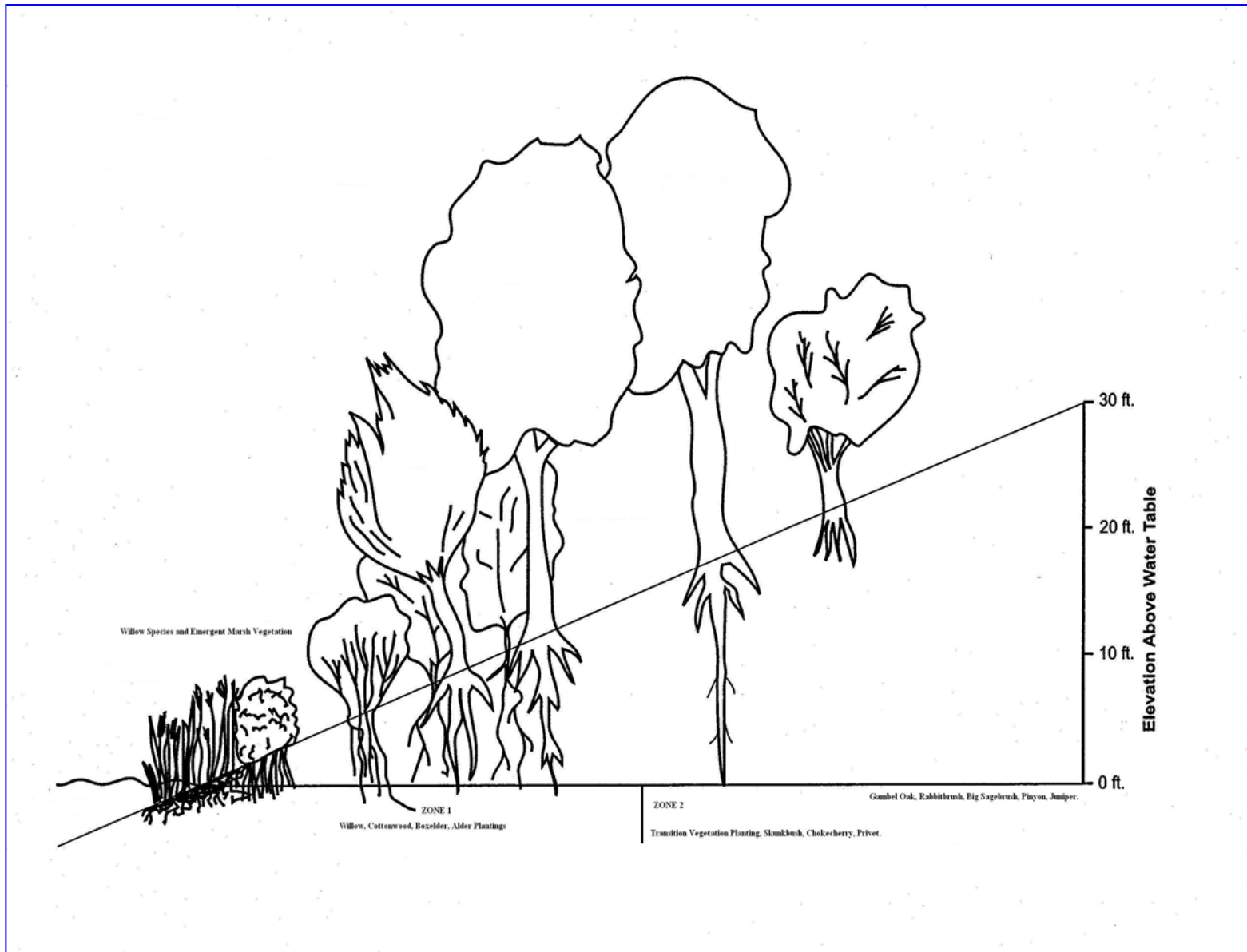
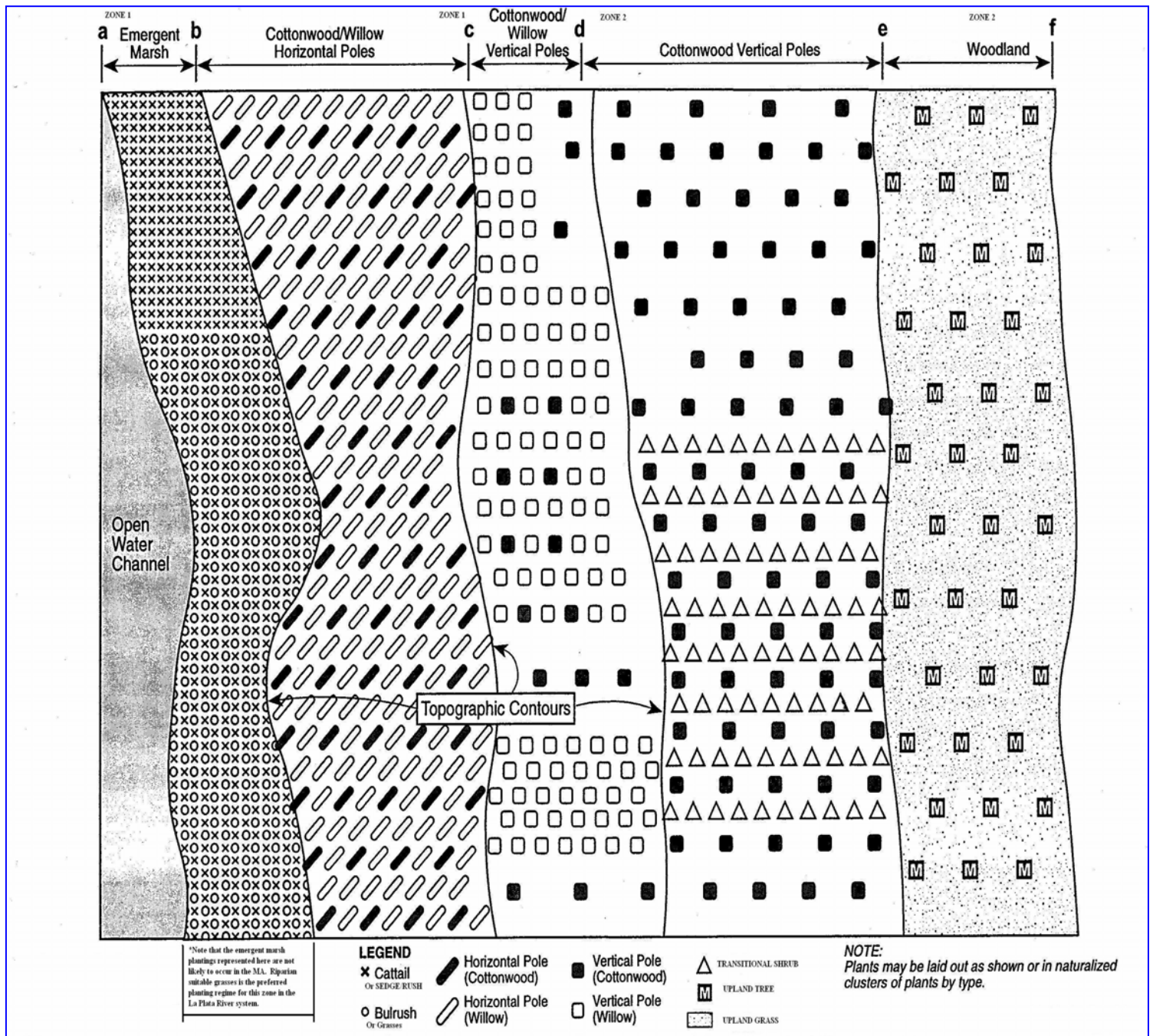




Figure 17. Conceptual Planting Design.



### **2.2.3 Buffer Zone Management**

Within the MA, a total of approximately 900 acres of upland habitats occur within the river valley bottomland (Table 1). As described previously, the condition of these habitats greatly affects the functional conditions of the riparian habitat they border. The removal of livestock grazing and the treatment of weed problem areas will greatly improve the condition of the upland buffers. In addition to the removal of livestock grazing, Reclamation will manage these upland habitats to restore vegetative coverage.

#### **2.2.3.1 Progress in Buffer Zone Management**

Reclamation is including buffer zone management in weed management, grazing management and in planting (as needed) mitigation activities. Buffer acres were treated for weed infestation in 2003 and will be fenced in 2004. Likewise if monitoring results indicate a need for re-seeding, then such will be applied. There will be a projected 30 acres of such planting in 2004.

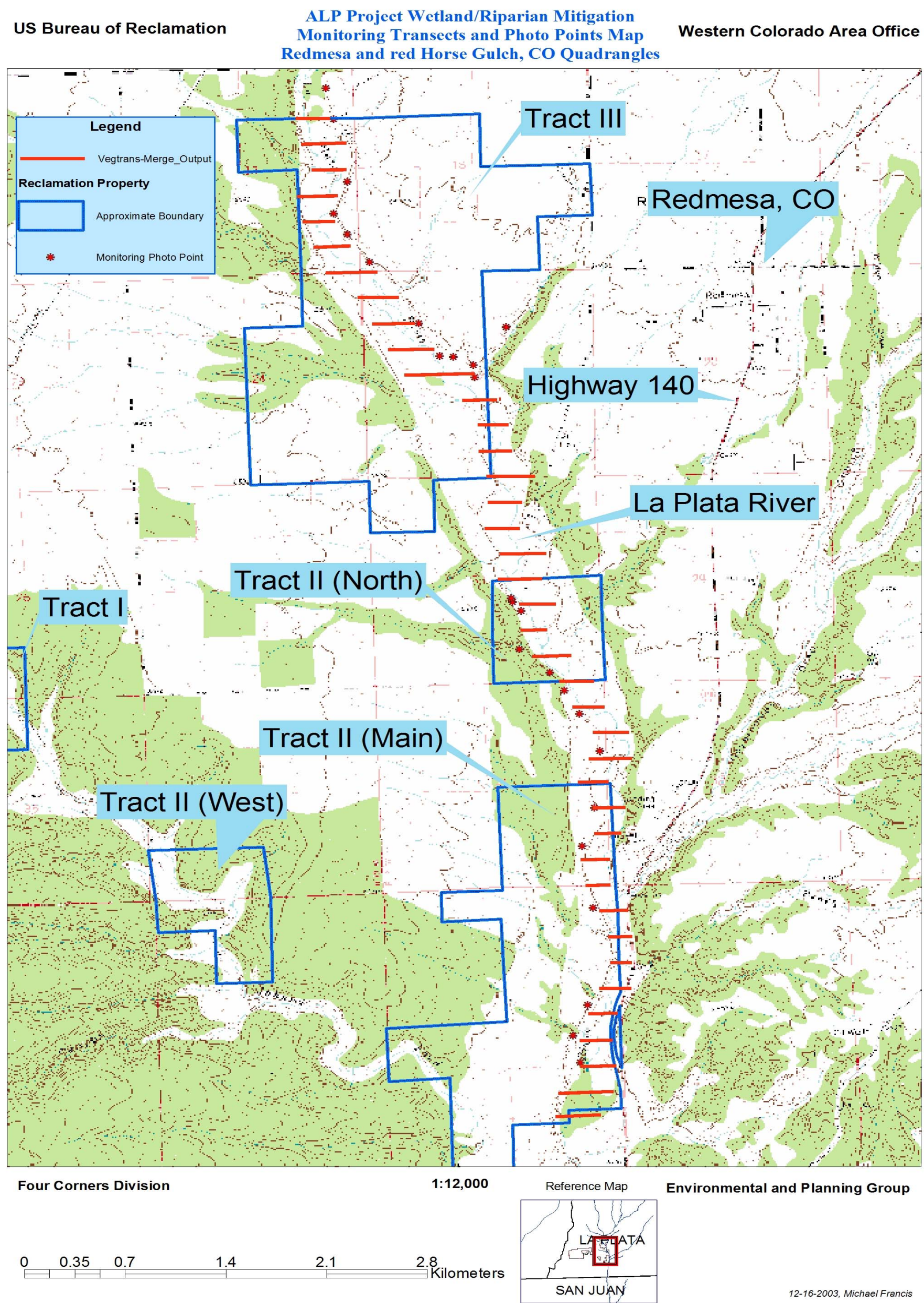
### **2.2.4 Vegetation Monitoring**

Reclamation completed mitigation vegetation monitoring transect and photopoint data collection in 2002 and 2003 to provide quantitative and qualitative (respectively) examinations of various weed communities to be found within the La Plata River drainage, particularly within the MA. Figure 18 below shows the location of these transects as well as photopoints. This monitoring also illustrates the native plant natural recovery and will illustrate the effectiveness of Reclamation's planting efforts in future years. The previous figures (figures 13-14) show how many of the various weed species spread significantly from 2002-2003 across the entire monitored area, but Reclamation expects to see a reverse of this in the 2004 monitoring as most of these monitored communities were treated within the 2003 season. The following figures (figures 19-20) show the improvements made in natural native vegetation density recoveries between the 2002 and 2003 seasons. It is important to note that these data use transects that include significant portions of bordering private and tribal lands that are not receiving similar types of treatment and where weed dispersal and spread is affecting monitoring results. In 2004 and beyond, Reclamation will split out these non-project transects for comparison against treated areas.

Water conditions were significantly different between years (see La Plata River flow monitoring above) and therefore some coverage readings related to foliar cover density variation is likely due to relative water availability. There is an across the board increase in vegetative densities which very likely also reflects cattle grazing removal from most reaches of the monitored river corridor (note that non-Project lands are included in the MA vegetation monitoring for comparison over time and many acres of riparian habitat so included are still subject to relatively intensive grazing pressure. See figure 8).

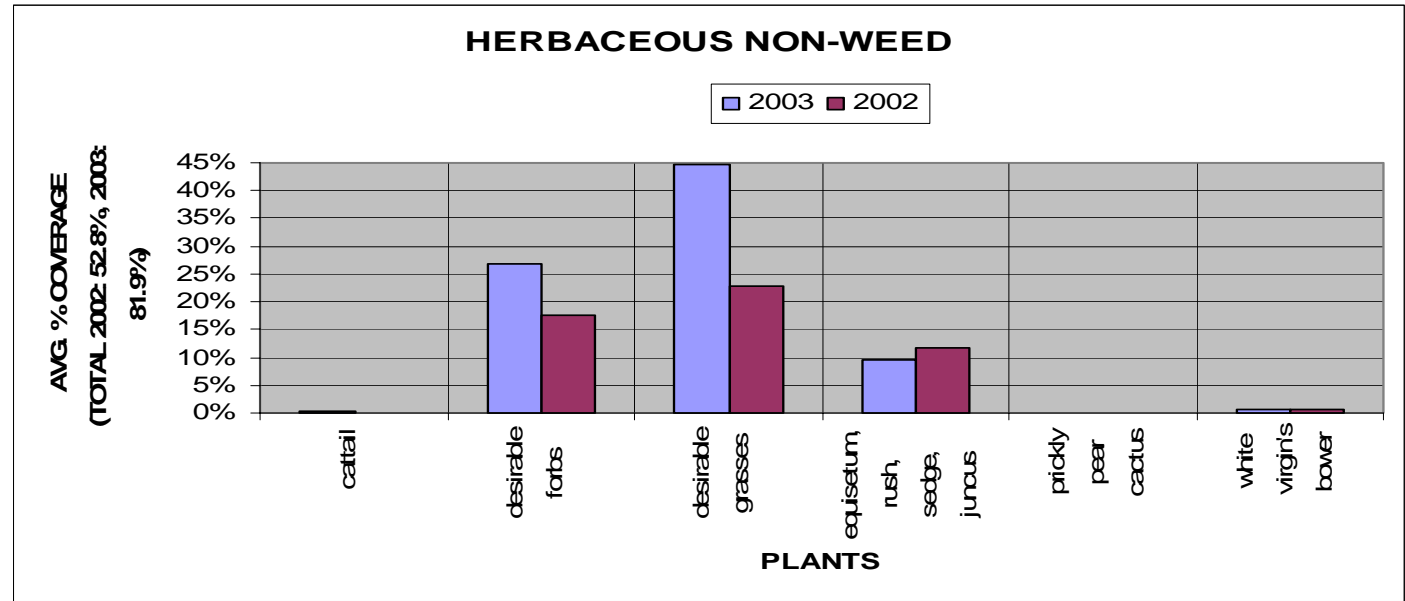


Figure 18. Vegetation Monitoring Transects and Photopoints.

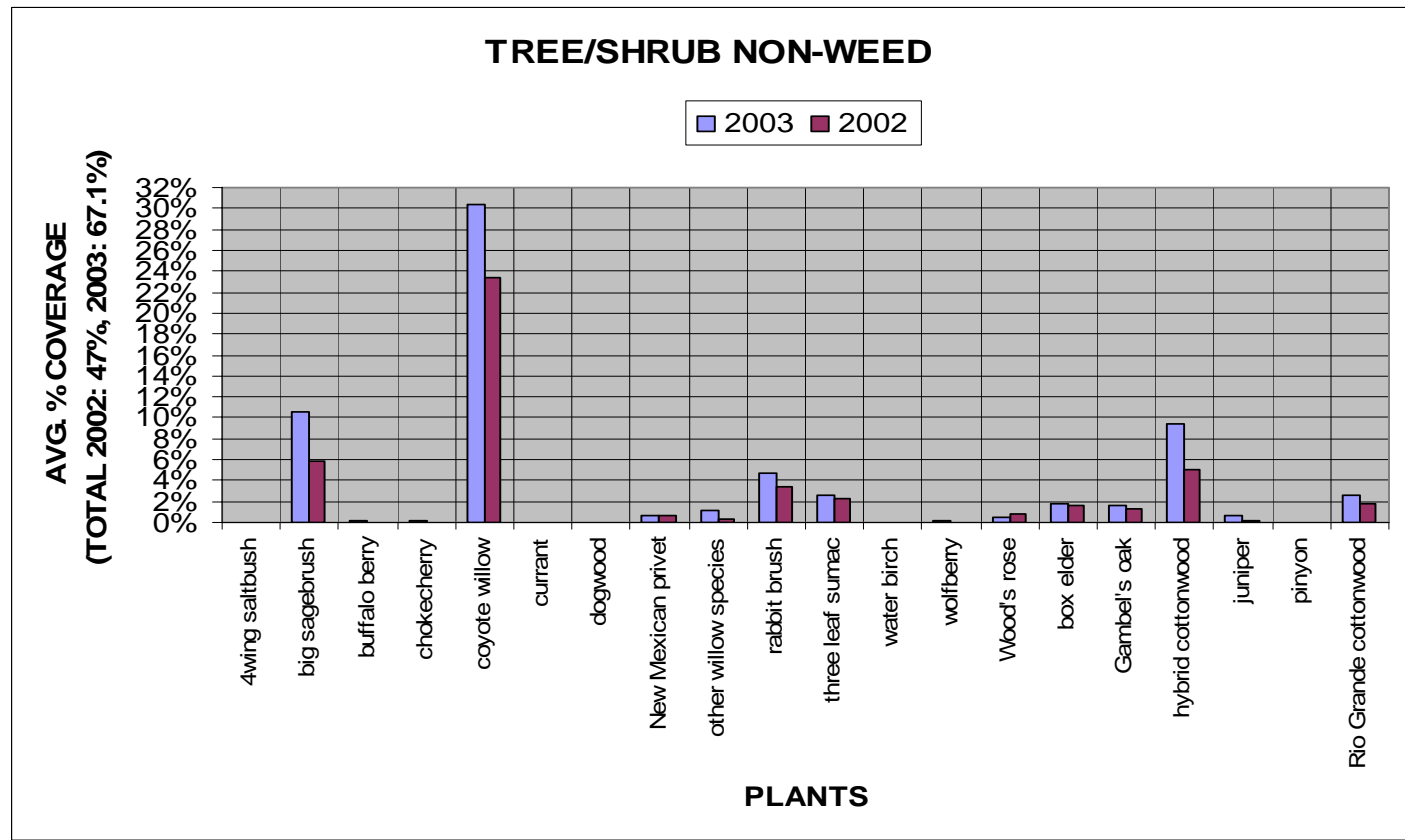




**Figure 19. Herbaceous Native Species Quantified Coverage** (Note that the percentage values on the left side of these figures represents the percent of total ground coverage by the specific plant type represented by the bars.)



**Figure 20. Tree/shrub Native Species Quantified Coverage**



## 2.3 Ongoing Mitigation Schedule

Subject to the availability of funding for the ALP Project, the anticipated schedule for the implementation of the mitigation measures is shown in Table 5.

**Table 5. Ongoing ALP Project wetland/riparian mitigation schedule.<sup>1</sup>**

Activity	Sub-activity	2002	2003	2004	2005	2006
Land Acquisition	none	****				
Install Fencing				****	****	
Weed Management		****	****	****	****	****
Buffer Zone		****	****	****	****	****
Streambank Stabilization	monitor	****	****	****	****	****
	re-assess need to stabilize			****	****	****
	select contractor				****	
	review & approve plans				****	
	construction					****
Floodplain Restoration	select contractor		****			
	review & approve plans		****			
	construction			****	**	**
	easements		****	****		

<sup>1</sup> Mitigation measures to be implemented upon completion of all applicable NEPA, CWA, NHPA, and ESA regulatory compliance - scheduling may be subject to change.